

### **APPENDIX 3: Proposed Changes to Part 43 Appendix A**

#### **Discussion:**

Paragraph (b)(1) would be amended to add the word "bonding" to the list of types of fabrication processes that constitute a major repair when used to manufacture a replacement for a primary structural member. The addition of the term "bonding" to the types of fabrication processes would modernize the rule to reflect the use of composite materials in modern aircraft airframes.

In paragraph (b)(1)(xxii), "the repair of damaged areas in metal or plywood stressed coverings exceeding 6 inches in any direction" would be changed to "repair of a damaged area in stressed coverings made of metal or plywood where the damage or removed material exceeds 6 inches." In addition, the proposed rule would clarify that the 6 inches specified is a measure of the damage, or, if material is required to be removed for the repair, the 6 inches specified is a measure of the removed material and not the total area of the repair. The wording "in any direction" also would be deleted because of redundancy.

A new paragraph (b)(1)(xxiii) would add "repair of a pressurized vessel." This paragraph would be added to reflect the critical importance of repairs to pressurized vessels.

A new paragraph (b)(1)(xxiv) would add "repair of a damaged area in a composite or chemically milled structure." This change would reflect the use of new materials and manufacturing techniques on modern aircraft primary structures.

Current paragraph (b)(1)(xxiii) would be redesignated as paragraph (b)(1)(xxv).

Current paragraph (b)(1)(xxiv) would be deleted because it is redundant of current paragraph (b)(1)(xxiii).

Current paragraph (b)(1)(xxv) would be redesignated as paragraph (b)(1)(xxvi).

Current paragraph (b)(1)(xxvi) would be redesignated as paragraph (b)(1)(xxvii) and modified to replace the language "greater than that required to repair" with the language "extending beyond."

Current paragraph (b)(1)(xxvii) would be redesignated as paragraph (b)(1)(xxviii).

Current paragraph (b)(1)(xxviii) would be revised to remove the redundant language "including rebottoming" and would be redesignated as paragraph (b)(1)(xxix). The FAA maintains that rebottoming is considered a method of repair and, therefore, does not need to be mentioned specifically.

A new paragraph (b)(1)(xxx) would add "repairs involving strengthening, splicing, reinforcing, or blendouts on life limited primary structure." This paragraph would be added to reflect concerns over life limited primary structure.

In paragraphs (b)(2)(i) and (b)(2)(ii), the term "separation or disassembly" would be revised to read "assembly." This change would stress the importance of the assembling process. This change also would delete the need to complete FAA Form 337 when the crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger is disassembled.

Paragraph (b)(2)(iii) would be amended to remove the word "special" because it is old terminology that has no measurable limit. The language "by welding, plating, metalizing, or other methods" would be revised to read "by any method other than those contained in the maintenance manual or type certificate holder's instructions for continued airworthiness." The FAA believes removing this would clarify the rule by reducing ambiguous wording.

In paragraph (b)(3), "Repairs of the following types to a propeller are propeller major repairs," would be amended to read "Repairs of the following types, excluding the treatment of surface corrosion and application of protective coating, are major repairs." The change would remove redundant language and clarify that the treatment of surface corrosion and application of protective coating is not a major repair.

The list of propeller and governor major repairs would be clarified by grouping together repairs to propeller types.

Paragraphs (b)(3)(i) and (b)(3)(ii) would be combined into the new paragraph (b)(3)(i). The term "machining" would be removed because it refers to a specific method of repair rather than a type of repair and therefore does not need to be identified specifically.

Paragraph (b)(3)(iii) would be redesignated as paragraph (b)(3)(ii) and amended to add the term "straightening" previously found in paragraph (b)(3)(i).

Paragraph (b)(3)(iv) and (b)(3)(ix) would be combined into the new paragraph (b)(3)(iii).

Paragraph (b)(3)(v) would be amended to add "inlay work," which previously was found in paragraph (b)(3)(vii).

Paragraph (b)(3)(vii) and (b)(3)(x) would be combined into the new paragraph (b)(3)(iv).

Paragraph (b)(3)(viii) would be redesignated as paragraph (b)(3)(vii) and amended to read "repair of a composite blade beyond the type certificate holder's recommendations for field repair." The FAA notes the change was necessary to modernize the rule to reflect current terminology on the use of composites in propeller

design. The change also was necessary because some type certificate holders of composite propeller blades have published field repair manuals.

Paragraph (b)(3)(xi) and (xii) would be redesignated as paragraphs (b)(3)(viii) and (ix), respectively. The FAA notes that under current paragraph (b)(3)(xi) and proposed paragraph (b)(3)(viii), external RPM adjustments are not considered repairs.

Paragraph (b)(3)(xiii) would be redesignated as paragraph (b)(3)(x), with minor editorial changes.

Paragraph (b)(3)(xiv) would be redesignated as paragraph (b)(3)(xi) and amended to add the word "hubs." The FAA determined this change was necessary to clarify the importance of repairs made to the internal elements of hubs.

In paragraph (b)(4), Appliance major repairs, the language would be amended to make the rule less restrictive.

Under the proposal a new paragraph (b)(4)(i) would be added to include as a major repair "repairs not made in accordance with the recommendations of the applicable type certificate holder or in accordance with an FAA Airworthiness Directive."

As proposed current paragraph (b)(4)(i) would be redesignated as paragraph (b)(4)(ii). This paragraph would be amended by replacing the "and" with an "or" and by adding "excluding direct reading compasses." The FAA notes that an instrument does not have to be calibrated and repaired to be considered a major repair, merely one or the other is enough. The FAA also notes that maintenance to direct reading compasses does not require special data, equipment, or training and can be accomplished in the field by mechanics.

The term "radio equipment" which appears in current paragraph (b)(4)(ii) would be retained in the proposed rule in paragraph (b)(4)(iii) because the FAA defines the term to include navigation and communication equipment as well as weather radar and all other equipment that involves the transmission and reception of radio waves.

Paragraphs (b)(4)(iii), (b)(4)(iv), and (b)(4)(v) would be removed. The FAA notes that the data, equipment, and training required for these tasks is now widely available to mechanics.

In paragraph (c), Preventive maintenance, the words "or the assembly of any primary structure or operating system" would be added. This would not be a new requirement; it merely would remove this language from individual preventive maintenance tasks in paragraphs (c)(9), (c)(10), (c)(11), and (c)(15). The word "disassembly" in current paragraphs (c)(9), (c)(10), (c)(11), and (c)(15) would be removed.

The proposal would redesignate paragraph (c)(7) as paragraph (c)(8). This would help group the servicing of hydraulic reservoirs with other servicing/lubrication items and group the making of fabric patches with other fabric related maintenance. The language

"or the removal of structural parts or control surfaces" would be removed and addressed by the proposed introductory language in paragraph (c). The language regarding making balloon small fabric repairs was removed from paragraph (c)(7) and added as new paragraph (c)(11).

Paragraph (c)(8) would be redesignated as paragraph (c)(7). The term "replenish" would be changed to "servicing." The proposal also would include the servicing of deicing fluid and would specify that the servicing of hydraulic reservoirs refers to the servicing of nonpressurized reservoirs only.

Paragraph (c)(9) would be revised to group the common areas and items of an aircraft together and to add the more inclusive term "repairing." The individual items would be removed from paragraph form and listed separately. The revision also would remove the "repair of upholstery" from current paragraph (c)(11) and "nonstructural cover plates" from current paragraph (c)(12) and add "upholstery" and "any nonstructural cover plates" to the list of repairs in paragraph (c)(9).

Paragraph (c)(10) would be revised by removing the wording "where no disassembly of any primary structure or operating system is involved and where such coating is prohibited or is not contrary to good practices." This requirement would be addressed by the proposed introductory language in paragraph (c).

New paragraph (c)(11) would contain the language "making small fabric repairs to a balloon envelope not requiring load tape repair or replacement," which was taken from current paragraph (c)(7).

Paragraph (c)(13) would be revised to specify its applicability to nonpressurized aircraft only. The FAA proposes that this change is necessary to prevent incidents or accidents caused by the incorrect installation of a critical side window on a pressurized aircraft.

Paragraphs (c)(14) and (c)(15) would be combined and redesignated as paragraph (c)(14). The language from current paragraph (c)(15) "with replacement parts approved for the aircraft not involving disassembly of any primary structure or operating system" would be removed. The disassembly provision would be addressed by the proposed introductory language in paragraph (c). In addition, the FAA notes that the requirements for using approved parts are not the focus of this appendix and are found elsewhere in the regulations. Therefore, this language is being removed from the proposed paragraph.

Current paragraphs (c)(16) and (c)(17) would be redesignated as paragraphs (c)(15) and (c)(16), respectively.

Current paragraph (c)(18) would be revised to clarify that it is permissible under preventive maintenance rules to replace wheels with skis and skis with wheels when no weight and balance computation is required. This change would pertain to aircraft certificated to use this type of equipment. Current paragraph (c)(18) would be redesignated as paragraph (c)(17).

Current paragraphs (c)(19) through (c)(22) would be redesignated as paragraphs (c)(18) through (c)(21), respectively.

Current paragraph (c)(23) would be revised to include the changing of engine oil as a preventive maintenance task and would be redesignated as paragraph (c)(22). The FAA notes that the previous omission of changing engine oil from the list of preventive maintenance items was cause for confusion in the industry because cleaning or replacing fuel and oil strainers or filter elements often requires changing the engine oil.

Current paragraph (c)(24) would be revised to specify that it is permissible to replace nickel cadmium (NICAD) batteries and to service lead-acid batteries. The FAA proposes that this distinction is necessary to avoid injury to personnel and damage to property caused by persons servicing NICAD batteries who are not familiar with the hazards that can be associated with these types of batteries. Current paragraph (c)(24) would be redesignated as paragraph (c)(23).

Current paragraph (c)(25) would be redesignated as paragraph (c)(24) and would be revised to remove the language "in accordance with the balloon manufacturer's instructions." The FAA notes that this language is unnecessary because § 43.2(a)(1) requires the use of methods, techniques, and practices acceptable to the Administrator.

Current paragraph (c)(26) would be redesignated as paragraph (c)(25) and would be revised to remove the language "incidental to operations." The FAA believes that the term "incidental to operations" caused confusion in the industry.

Current paragraph (c)(27) would be redesignated as paragraph (c)(26) and would be revised for clarity.

Current paragraph (c)(28) would be removed. The proposal would update the rule by deleting the installation of antismisfueling devices, as most aircraft already have the smaller diameter fuel tank filler openings incorporated.

Current paragraph (c)(29) would be redesignated as paragraph (c)(27).

Current paragraph (c)(30) would be redesignated as paragraph (c)(28) and would be revised with certain editorial and organizational changes. The content of current paragraph (c)(30) would remain unchanged.

Current paragraphs (c)(31) and (c)(32) would be redesignated as paragraphs (c)(29) and (c)(30), respectively, with editorial changes.

Recommended Rule Language: